

# ANNUAL REPORT

ON THE  
SANITARY CONDITION  
OF THE

## Runcorn Rural District,

DURING THE YEAR

**1908,**

BY

JOSEPH ADAMS, M.B., C.M., &C.,

MEDICAL OFFICER OF HEALTH.

---


Area of District	...	...	...	...	49,309 Acres
Census Population, 1901	...	...	...	...	23,203
Population, Estimated to middle of 1908	...	...	...	...	25,350

---

“If we had a perfect knowledge of the laws of life, and could  
“practically apply this knowledge in a perfect system of hygienic rules,  
“disease would be impossible.”

“Whether the world is ever to see such a consummation, no man  
“can say, but, as ages roll on, hope does, in some measure grow. In the  
“midst of all our many weaknesses, and all our many errors, we are  
“certainly gaining knowledge:—and that knowledge tells us, in no  
“doubtful terms, that the fate of man is in his own hands.”

—PARKES, *Practical Hygiene*.



Digitized by the Internet Archive  
in 2018 with funding from  
Wellcome Library

<https://archive.org/details/b30047390>

## ANNUAL REPORT.

---

*To the Chairman and Councillors of the Runcorn  
Rural District Council.*

---

MR. CHAIRMAN AND GENTLEMEN,

I have the honour to present for your consideration my Annual Report on the sanitary condition of the Rural District of the Runcorn Union during the year 1908.

My Report is based, as on former occasions, upon the General order of the Local Government Board of March 1880, relating to Annual Reports of Medical Officers of Health, in which the subject matter of such Reports is classified and arranged under the following Sections, viz;—

SECTION I.—Tabular Statistics of the Sickness and Mortality within the District, classified according to diseases,, Ages and Localities.

SECTION II.—A summary of the action taken during the year for preventing the spread of disease.—

SECTION III.—An account of the Sanitary Condition of the District at the end of the year.—

SECTION IV.—An account of the inquiries made by the Medical Officer of Health, as to conditions injurious to health within the district; and of proceedings which have been taken, or advised upon, under any statutes.—

SECTION V.—An account of the supervision exercised by him or on his advice, for sanitary purposes, over places and houses which the District Council have power to regulate—and lastly.—

SECTION VI.—A record of the action taken by him, or on his advice, in regard to offensive trades, and to factories and workshops—as well as to dairies, cowsheds, and milk-shops.

## SECTION 1.

---

# VITAL STATISTICS.

AN ACCOUNT OF THE SICKNESS AND MORTALITY  
WITHIN THE DISTRICT, WITH TABULAR  
STATEMENTS APPENDED, AND CLASSIFIED  
ACCORDING TO DISEASES, AGES, AND  
LOCALITIES.

---

The Statistical figures relating to this Section are clearly summarised in the Tables appended to this Report, and which are drawn up in accordance with instructions from the Local Government Board. These Tables should be carefully perused by all who are anxious to be acquainted with the Vital Statistics of the District with which they are officially connected.

The contents of these Tables are briefly hereinunder set out; viz.

TABLE I.—This Table contains the gross totals of Vital Statistics for 1908, and, for purposes of comparison, the figures for the preceeding ten years are given. The Table gives, in columns numbered from left to right, (2) the population estimated to the middle of each year; (3) the number of births,—and (4) the birth-rate for each year; (5) the number of deaths under one year of age, with (6) the death rate per 1000 of registered births; (7) the total deaths registered within the District, together with, (8) the death rate per 1000 of estimated population; (9) the deaths in public institutions within the District; (10) the deaths of “*Non-Residents*” in public institutions within the District; (11) the deaths of “*Residents*” in public institutions beyond the District:—(12) the *nett*, or corrected total of deaths, belonging only to the District, with, finally (13) the *death-rate* per 1000 of estimated population.

TABLE II.—This Table sets out statistical calculations for (a) the Whole District, and for (b) the three Registration Sub-Districts, of the following facts : (1) of the population estimated to the middle of each of the preceeding ten years; (2) of the births registered in each year; (3) of the deaths at all ages; (4) of the number of deaths under *one year* of age;—with (5) the same statistical observations for 1908 set out at the foot of the Table.

TABLE III.—This refers only to the year 1908, and presents a condensed summary of all cases of *Notifiable* Infectious diseases which have been notified to me during the year, and these I have classified according to Registration Sub-Districts, with the names of the individual townships which have been invaded by infectious diseases.

TABLE IV.—This is the main Mortality Table, in which are set out *all* the deaths occurring within the District : the causes of death are given, and the total deaths occurring within the District are classified according to diseases, ages, and localities.

TABLE V.—This Table is a very useful statement of the serious facts of Infantile Mortality, from stated causes, in weeks and months, of deaths in children under one year of age.

---

I have treated the tables referred to under 3 heads, viz :—

- 1.—General Statistics :—
- 2.—Zymotic Mortality :
- 3.—Other diseases worthy of notice :

## 1. GENERAL STATISTICS.

The Runcorn Rural District comprises the whole of the Runcorn Union, with the exception of Runcorn Urban District, and it consists of 40 Townships.

The District area contains 49,309 acres.

At the *1891* census, the population was 24,665.

At the *1901* census, the population was 23,203.

I estimate the population, to the middle of 1908 to be about 25,350.

In making this estimate, during this decade, I am relying chiefly on excess of births over deaths, coupled with any extraneous factor which may temporarily disturb our normal rate of increase, to lead me to a correct estimate of population each year.

The area of the Runcorn Rural District Council is divided into three Registration Sub-Districts, as follows :

(1) RUNCORN SUB-DISTRICT.—Superficial area 9,034 acres ; population estimated to the middle of 1908, to be about 5045.

It comprises the following Townships :—Aston, Aston Grange, Clifton, Halton, Norton, Stockham, Sutton, and Weston, (including Weston Point).

(2) FRODSHAM SUB-DISTRICT. — Superficial area 15,727 acres ; population estimated to the middle of 1908, to be about 9,273.

It comprises the following Townships :—Alvanley, Frodsham, Frodsham Lordship, Helsby, Kingsley, Kingswood, Manley, Newton-by-Frodsham, and Norley.

(3) BUDWORTH SUB-DISTRICT. — Superficial area 24,530 acres, population estimated to middle of 1908, to be about 11,032.

It comprises the following Townships :—Aston Grange, Antrobus, Appleton, Bartington, Budworth, Crowley, Daresbury, Dutton, Hatton, Keckwick, Moore, Newton-by-Daresbury, Preston-o-th'-Hill, Seven Oaks, Stockton Heath, Stretton, Walton Inferior, Walton Superior, Whitley Inferior, Whitley Superior, and the three added Townships of Grappenhall, Latchford Without, and Thelwall.

During the year 1908, 665 births, and 350 deaths were registered as having occurred within the district, compared with an average for the preceding ten years of 633 births and 335 deaths—(for details, please refer to Table I in Appendices).

This gross total of 350 deaths in your District includes 21 deaths occurring in persons belonging to the Runcorn Urban District, and which occurred in the Union Workhouse or Hospital, at Dutton ; these 21 deaths must therefore be deducted from your total, as not belonging to your District.



Further, there were 10 deaths from Consumption, or Tubercle of Lungs, or other Tuberculous disease, which occurred at the Manchester Sanatorium at Kingswood; and these 10 deaths from Tubercular disease belong to Manchester and districts adjoining, and must therefore be deducted from your total as not belonging to your District, bringing your gross total down to 319. To these, however, must now be added 6 deaths of "residents" belonging to your District which occurred in public institutions outside your District, namely, one in Liverpool Royal Infirmary, one in Liverpool Eye and Ear Infirmary, and 4 in Warrington Infirmary. Adding these 6 deaths to the previous correction of 319 deaths, we get finally a *corrected, or nett* total of 325 deaths, as belonging to the Runcorn Rural District during 1908.

This corrected total of 325 deaths is 13 less deaths than in 1907, and is 10 below the average deaths for the preceeding ten years.

When births and deaths for 1908 are compared with the averages of the preceeding ten years, it will be observed that there is an *increase* of about 32 births, with a decrease of 10 deaths. From the population point of view, this is distinctly satisfactory. The births have increased, and the deaths have decreased.

Out of this corrected total of 325 deaths belonging to Runcorn Rural District alone 13 were "uncertified" and 25 formed the subjects of Coroner's inquiries.

The causes of death, as ascertained at Coroner's inquests, were, briefly as follows :—

Accidentally killed	...	...	...	5
Found drowned	...	...	...	5
Accidentally smothered	...	...	...	1
Disease of Heart	...	...	...	4
Convulsions	...	...	...	1
Inflammation of kidneys	...	...	...	1
Obstruction of Bowels	...	...	...	1
Apoplexy	...	...	...	1
Broncho-pneumonia	...	...	...	1
Hæmorrhage of Brain...	...	...	...	1
Suicide by drowning	...	...	...	2
„ by hanging	...	...	...	1
„ by shooting	...	...	...	1

Of the 665 births, 330 were males, and 335 were females;—they were distributed as follows:—

Runcorn Sub-district ...	63 males	56 females
Frodsham Sub-district ...	112 males	106 females
Budworth Sub-district ...	155 males	173 females
<hr/>		
Total...	330 males	335 females
<hr/>		

Of the gross total of 350 registered deaths, 167 were males, and 183 were females.

The birth rate for the whole District during the year 1908 was at the rate of 26·2 per 1000 per annum of estimated population, being at a rate of 0·3 *less* than the average of the preceeding ten years.

The death-rate for the whole District during the year 1908, was at the rate of 14·2 per 1000 per annum of estimated population, calculated on the *net* total of 325 deaths; this death-rate is 1·4 below the average of the preceeding ten years.

The *total registered* deaths were distributed as follows:—

Runcorn Sub-district ..	29 males	26 females
Frodsham Sub-district ...	61 males	62 females
Budworth Sub-district ...	77 males	95 females
<hr/>		
		167 males .. 183 females
<hr/>		

Of these deaths, 62 occurred in children *under one year of age*, (see Appendix V. on Infantile Mortality) with a death-rate of 93·2 per 1000 of registered births, (not of estimated population) as compared with the previous rate of 84·6 per 1000 registered births during 1907 and an average of 115·3 per 1000 registered births for the preceeding ten years.

Although the rate of Infantile Mortality in 1908 is thus seen to compare unfavourably with that in 1907, there is still a great improvement on the records of 9 or 10 years ago, for in 1899 the death-rate among infants under one year of age was 136·4 per 1000 of registered births, compared with only 93·2 per 1000 in 1908, showing a decrease



of 43·2 per 1000. This great saving of infant life is a most satisfactory result of the dissemination of more accurate and scientific knowledge in the care and rearing of infants, and is evidence of a widely awakening interest in so important a matter, on the part of the general public, and especially of the mothers.

The facts in reference to Infantile Mortality are summarised in Table V. in Appendices. An examination of this Table will show you that these 62 deaths contain little by way of reproach, and were chiefly due to perfectly natural causes; there was only one child suffocated by the mother 'overlying' it: 15 children died through Premature Birth, 8 from Convulsions, 8 from Wasting Diseases, 5 from Tuberculous Diseases, 7 from Diarrhoeal Diseases, 7 from Bronchitis and Pneumonia, 6 from infectious Diseases, (of which 4 were due to Whooping Cough, and one each to Diphtheria and Measles), and the remaining 7 from various other causes.

There were no deaths among the illegitimate children, and the number of illegitimate births was only 9, as compared with 25 in the preceding year.

Of the remaining deaths, occurring in persons over one year of age, the incidence, in regard to age, was distributed as follows:—

- 33 deaths occurred between 1 and 5 years of age.
- 15 deaths occurred between 5 and 15 years of age.
- 13 deaths occurred between 15 and 25 years of age.
- 97 deaths occurred between 25 and 65 years of age.
- 105 deaths occurred between 65 years and upwards.

### **B. Zymotic Mortality.**

The total number of cases of Infectious Diseases notified during 1908, was 223, and were caused by the following diseases;—

Diphtheria and Membranous Croup	...	44	cases
Erysipelas	...	23	"
Scarlet Fever	...	145	"
Typhoid (Enteric) Fever	...	10	"
Puerperal Fever	...	1	"
<b>TOTAL</b>	...	<b>223</b>	

The necessary action taken by me and your Inspector, in dealing with these outbreaks, is condensed in the Tabular Summary immediately following these observations.

From all these notified cases, and from a few other zymotic diseases which are not notifiable, the following deaths occurred. viz.,—from

Smallpox ... ..	no deaths
Measles ... ..	3 "
Scarlet Fever ... ..	8 "
Whooping Cough ... ..	6 "
Diphtheria, including Membranous Croup	6 "
Typhoid Fever ... ..	0 "
Influenza ... ..	1 "
Diarrhœa and Enteritis ... ..	4 "
Erysipelas ... ..	0 "
Other Septic Diseases ... ..	0 "
<hr/>	
TOTAL ... ..	28 deaths
<hr/>	

Measles was fairly prevalent over the District in 1908, but only accounted for 3 deaths. This was accompanied by a general prevalence of whooping cough, from which 6 deaths occurred.

Scarlet Fever accounted for 8 deaths out of 145 cases, of which 3 occurred in the Isolation Hospital at Dutton: one of these cases, however, was complicated with intestinal obstruction when admitted, and death was due more to this complication than to scarlet fever. The death rate from this disease was unusually high, being 5·5 per cent. Last year 3 deaths occurred in 105 cases, or 2·8 per cent, and in the previous year, 1906, not a single death occurred out of 179 cases which were notified to me.

Typhoid Fever caused no deaths: 10 cases were notified and 4 removed to Isolation Hospital; in the other cases, removal to Hospital was declined.

Diphtheria has again been prevalent, 44 cases having been notified, and resulting in 6 deaths, or a death-rate of 13·6 per cent of cases notified. Last year 79 cases were notified and 13 deaths occurred, with a death-rate of 16·4 per cent. of cases notified; thus 1908 is better than 1907, but the marked prevalence of this disease is unsatisfactory.

and is difficult to explain, except on the ground of personal infection, through school, or otherwise, the premises attacked seldom containing sanitary defects, and both milk and water-supplies being satisfactory. I shall, later on, recur to this subject.

**C.** *Other diseases or groups of diseases, worthy of notice, are the following :—*

(a) *Phthisis : (tubercle of lungs) :—*causing 15 deaths, of which 2 occurred in persons between 1 and 5 years of age ;—3 between 15 and 25 years of age ;—9 between 25 and 65 years of age :—and 1 in persons over 65 years of age.

(b) *Other tuberculous diseases :—*Causing 20 deaths, of which 4 occurred in infants under one year of age ;—6 between 1 and 5 years of age ;—4 between 5 and 15 years of age :—and 6 between 25 and 65 years of age.

(c) *Cancer : malignant disease :—*Causing 15 deaths, of which one occurred between 15 and 25 years of age ;—9 between 25 and 65 years of age ;—and 5 in persons over 65 years of age.

(d) *Bronchitis :—*Causing 23 deaths ; — of which 5 occurred in infants under one year of age ;—one between 1 and 5 years of age ; one between 5 and 15 years of age ;—7 between 25 and 65 years of age ;—and 9 in persons of 65 years of age and upwards.

(e) *Pneumonia :—*Causing 16 deaths ;—of which 2 occurred in infants under 1 year of age ;—4 between 1 and 5 years of age ;—one between 15 and 25 years of age ;—4 between 25 and 65 years of age ;—and 5 in persons of 65 years of age, and upwards.

(f) *Pleurisy* :—Causing 4 deaths ;—of which one occurred between 1 and 5 years of age ;—one between 25 and 65 years of age ;—and 2 in persons of 65 years of age and upwards.

(g) *Other diseases of the Respiratory organs* :—No deaths occurred.

(h) *Alcoholism* :—Causing one death, in a person between 25 and 65 years of age.

(i) *Veneral Diseases* :—No deaths occurred.

(j) *Premature Birth* :—15 deaths occurred.

(k) *Diseases and accidents of parturition* :—One death occurred.

(l) *Heart Diseases* :—Causing 32 deaths ;—of which one occurred between 5 and 15 years of age ;—2 between 15 and 25 years of age ;—15 between 25 and 65 years of age ;—and 14 in persons of 65 years of age and upwards.

(m) *Accidents* :—Causing 11 deaths ;—of which one occurred in an infant under one year of age ;—2 between 15 and 25 years of age ;—7 between 25 and 65 years of age ;—and one in persons of 65 years of age and upwards.

(n) *Suicides* :—Accounting for 4 deaths, 3 in persons between 25 and 65 years of age ;—and one in persons of 65 years of age and upwards.

(o) *Deaths from all other causes* :—Causing 140 deaths ;—of which 26 occurred in infants under one year of age ;—6 between 1 and 5 years of age ;—4 between 5 and 15 years of age ;—4 between 15 and 25 years of age ;—33 between 25 and 65 years of age ;—and 67 in persons of 65 years of age and upwards.

The 223 cases of Infectious Diseases notified to me during 1908 are dealt with in the Tabular Summary now following.

# TABULAR SUMMARY

## OF

# Outbreaks of Infectious Diseases

### DURING THE YEAR 1908.

No	Date	Disease	Locality	A. Source of Infection	A. Extent of Outbreak
				B. Action taken	B. Result C. Remarks
1	Jan.	Scarlet Fever.	Newton-by-Frodsham.	A Infection from Frodsham outbreak of 1907. B Visited; removal to Hospital declined in one case, and accepted in the other: As the premises in the former case were a milk farm, compliance with milk regulations was strictly enforced; the patient was well isolated, and final disinfection of premises, by Formalin Spray, and of clothing, bedding &c, by steam disinfection at Isolation Hospital, Dutton, were carried out.	A. Two houses. Two cases. B. No death.
2	Jan	Diph. theria.	Stockton Heath.	A Source of infection obscure; new premises, with Warrington water, and good drainage: B Visited; removal to Hospital declined, final disinfection of premises, bedding, clothing &c.	A. One house. B. No death

## TABULAR SUMMARY.—Continued.

No.	Date	Disease	Locality	A. Source of Infection	A. Extent of Out-break
				B. Action taken	B. Result C. Remarks
3	Jan. to Mar.	Scarlet Fever.	Stockton Heath.	<p>A Infection most probably derived from Warrington in the first instance, and spread both by personal infection and school. The disease remained in the district for 3 months.</p> <p>B All cases were visited, and out of the 13 cases, 7 were removed to Isolation Hospital, in several cases, removal to Hospital was declined, and in other cases, no bed in Hospital was available for removal. The premises were disinfected with Formalin spray, and the clothing, bedding, &amp;c, removed to Dutton for steam disinfection.</p>	<p>A Nine houses. Thirteen cases.</p> <p>B. <i>One Death.</i></p>
4	Jan.	Diphtheria.	Clifton	<p>A Source of infection obscure; there were 'un-trapped' grils on the premises.</p> <p>B Visited, and issued the usual preventive orders: removal to Hospital was declined: there were only 2 mild cases: Final disinfection of premises, clothing, bedding, &amp;c, was carried out.</p>	<p>A. One house. Two cases.</p> <p>B. No death.</p>
5	Jan	Diphtheria.	Antrobus.	<p>A A Sporadic case: source of infection obscure.</p> <p>B Visited; removal to Hospital declined; disease mild in character; final disinfection of premises, bedding, &amp;c, carried out.</p>	<p>A. One house. One case.</p> <p>B. No death.</p>



## TABULAR SUMMARY.--Continued.

No	Date	Disease	Locality	A. Source of Infection	A. Extent of Out-break
				B. Action taken	B. Result C. Remarks
6	Jan.	Diphtheria.	Crowley.	A Source of infection obscure, but there was a generally insanitary condition of premises, due mainly to want of care and cleanliness. B Visited; removal to Hospital declined; a general improvement of the premises was effected, and final disinfection of premises, bedding, clothing, &c, carried out.	A. One house. Three cases. B. No death.
7	Jan.	Scarlet Fever	S retton.	A Source of infection obscure, but probably Stockton Heath, (see no 2 <i>Ante</i> ). B Visited; issued usual preventive orders; final disinfection of premises, clothing, bedding, &c, carried out.	A. One house. One case. B. No death.
8	Jan.	Typhoid Fever.	Budworth.	A No appreciable source of infection ascertained. B Visited, issued the usual preventive orders; final disinfection of premises clothing, bedding, &c.	A. One house. One case. B. No death.
9	Jan.	Scarlet Fever.	Grappen hall.	A Infection obscure, but probably Warrington. B Visited; and issued the usual preventive orders; all three cases were removed to Isolation Hospital at Dut on, where one died and final disinfection of premises, clothing, bedding, &c carried out.	A. Two houses. Three cases. B. <i>One death.</i>

## TABULAR SUMMARY.—Continued.

No.	Date	Disease	Locality	A. Source of Infection	A. Extent of Outbreak
				B. Action taken.	B. Result C. Remarks
10	Jan.	Puerperal Fever.	Grappen-hall.	A. An incompetent "woman of experience" had acted as midwife in this case. B. Visited; and reported the midwife to the Medical Officer of Health to the adjoining District, from which she came. She was interdicted from further practice as a midwife.	A. One house. One case. B. No death.
11	Jan.	Typhoid Fever.	Weston.	A. No distinct cause of disease was ascertained, but there were several defects in sanitation. B. Visited; the case was removed to Isolation Hospital at Dutton; the sanitary defects were remedied, and final disinfection of premises, clothing, bedding, &c, carried out.	A. One house. One case. B. No death.
12	Feb. to Oct.	Scarlet Fever.	Frodsham Lordship. (Five Crosses)	A. Infection probably derived from the same source as that of Newton-by-Frodsham, (see outbreak No 1). B. Visited all cases, out of which (13 in all) 6 were removed to Isolation Hospital at Dutton. The first two cases occurred early in February; only one was removed to Hospital: later in the same month, four more cases occurred; after that, no cases occurred in March, 3 in April, and one each in May, June, August and October. I have however, grouped them all together in this outbreak, as they appeared to be correlated. The premises, clothing, bedding, &c, in all cases were finally disinfected.	A. Twelve houses. Thirteen cases. B. No death.

## TABULAR SUMMARY. — Continued.

No.	Date	Disease	Locality	A. Source of Infection B. Action taken.	A. Extent of Out- break B. Result C. Remarks
13	Feb.	Scarlet Fever.	Kingsley.	A Infection was most probably derived from some of the cases in the preceding outbreak in Frodsham Lordship. B Visited; and obtained removal of the patient to the Isolation Hospital at Dutton. Final disin- fection of premises, clothing bedding, &c, carried out.	A. One house. One case. B. No death.
14	Feb.	Scarlet Fever.	Whitley Superior.	A Source of infection obscure, probably Warring- ton. B The usual preventive measures were adopted, and final disinfection of pre- mises, clothing, bedding, &c carried out. No bed available in Hos- pital for removal.	A. One house. One case. B No death.

## TABULAR SUMMARY.—Continued.

No.	Date	Disease	Locality	A. Source of Infection	A. Extent of Out- break
				B. Action taken	B. Result C. Remarks
15	Mar. to Sep.	Scarlet Fever	Weston (and Weston Point)	<p>A. The first cases arose in Weston Point in March, but where the disease was contracted was not ascertained: in April it broke out in Weston, and continued in both Wards of the Township until September. It was unfortunate that we were only able to remove 2 out of the 19 cases to the Isolation Hospital, and this may account to an extent for the prevalence; but, in addition to lack of beds, there was a marked disinclination on the part of parents, to allow their children to be removed.</p> <p>B. I visited the cases as they arose, and attempted to secure removal of the worst-isolated cases: only 2 were removed. I issued the usual preventive orders and final disinfection of premises, clothing, bedding, &amp;c, was carried out. The Schools were closed during the worst period for a while and disinfected.</p>	<p>A. 15 houses. 19 cases.</p> <p>B. No death.</p>

## TABULAR SUMMARY.—continued.

No.	Date	Disease	Locality	A. Source of Infection	A. Extent of Outbreak
				B. Action taken	B. Result C. Remarks
16	Mar. to Dec.	Scarlet Fever.	Frodsham	<p>A This extensive and alarming outbreak was primarily an extension from the Frodsham Lordship outbreak, (see No 12 <i>Ante</i>). The school population is mixed, owing to different children from the same family frequently attending school both in Frodsham and Frodsham Lordship.</p> <p>B The cases were visited as they arose, and the usual preventive orders issued. Such cases as could be accommodated in Isolation Hospital at Dutton were removed there, but the outbreak rapidly outgrew the accommodation, and only 11 out of the 47 cases were removed. Removal was declined in many instances but there were always candidates for vacant beds as they occurred. Two deaths took place, one at home and one in Hospital; the latter was suffering also from "obstruction" when admitted. The schools in the entire area were closed for a considerable time, and disinfected with Formalin spray prior to re-opening. This was by far the most formidable outbreak for years, no less than 33 houses having been invaded, with 47 cases, and 2 deaths.</p> <p>Final disinfection of premises, clothing, bedding &amp;c, carried out in all cases.</p>	<p>A. 33 houses. 47 cases. B. 2 deaths.</p>

## TABULAR SUMMARY.—Continued.

No.	Date	Disease	Locality	A. Source of Infection.	A. Extent of Out-break
				B. Action taken.	B. Result C. Remarks
17	Mar. to Dec.	Diph- theria	W. ston	A Source of infection obscure, but, later on, probably propagated by school infection. B Visited all cases, and issued the usual preventive orders; some slight sanitary defects were remedied. Only one case was removed to Isolation Hospital, the majority declining removal. All cases were mild in character, final disinfection of premises, clothing, bedding, &c, was carried out.	A. Four houses. Six cases. B. <i>One death.</i>
18	Mar.	Scarlet Fever	Hatton	A Source of infection obscure, no cases being known in the neighbourhood. B Visited; usual preventive orders issued: no bed was available in Hospital at the time; final disinfection of premises, clothing, bedding &c, carried out.	A. One house. Two cases. B. <i>Two deaths</i>
19	Mar.	Diph- theria	Aston	A A sporadic case; infection obscure: no defects. B Visited; removal to Hospital declined, final disinfection of premises clothing, bedding &c carried out.	A. One house. One case. B. No death.



## TABULAR SUMMARY-Continued.

No	Date	Disease	Locality	A. Source of Infection	A. Extent of Out-break
				B. Action taken.	B. Result C. Remarks
20	Mar.	Diphtheria.	Frodsham Lordship.	A. Infection believed to have been contracted outside the district. B. Visited; no bed available in Hospital; usual preventive orders issued, and final disinfection of premises, clothing, bedding &c carried out.	A. One house. One case. B. No death.
21	Mar.	Scarlet Fever.	Moore.	A. Infection from Warrington, where Scarlet fever was prevalent. B. Visited; removal to Hospital declined; the usual preventive orders issued, and final disinfection carried out.	A. One house Two cases. B. No death.
22	Mar. to May.	Diphtheria.	Frodsham.	A. No source of infection ascertained in the first case; it was a doubtful case; in the second case, I condemned the sanitary arrangements as a nuisance, requiring prompt abatement. B. Visited; removal to Hospital declined; usual orders issued, and final disinfection carried out.	A. Two houses. Two cases. B. <i>One death.</i>
23	Mar.	Enteric Fever (Typhoid)	Halton (Bate's Bridge).	A. No cause found for the disease, but the general condition of this locality is not satisfactory. B. Visited, and issued the usual preventive orders; final disinfection of premises, bedding, clothing, &c., carried out, after the patient had been removed to Hospital.	A. One house. One case. B. No death.

## TABULAR SUMMARY.—Continued.

No.	Date	Disease	Locality	A Source of Infection	A. Extent of Out-break
				B. Action taken	B. Result C. Remarks
24	April	Typhoid Fever	Grappenhall	A No cause for disease ascertained in either case. B Removal to Hospital declined, good isolation being afforded in large houses which were finally disinfected after recovery of patients.	A. Two houses. Two cases. B. No death.
25	April	Typhoid Fever	Weston	A Source of infection obscure, but the premises are not very satisfactory. B Visited, and removed the patient to Hospital; the usual precautionary measures were adopted, and final disinfection carried out.	A. One house. One case. B. No death.
26	April	Diphtheria	Moore	A Two cases occurred, no cause for which was ascertained. B Removal to Hospital was declined, and final disinfection of premises &c carried out.	A. Two houses. Two cases. B. One death.
27	April	Scarlet Fever	Sutton	A Infection from Frodsham outbreak. B Visited; removal of patients was impossible at the time, with the result that all 7 children took the disease. Final disinfection of premises, clothing, bedding &c carried out.	A. One house. Seven cases. B. No death.

## TABULAR SUMMARY.—Continued.

No	Date	Disease	Locality	A Source of Infection	A Extent of Out- break
				B Action taken	B Result C Remarks
28	May to Dec.	Scarlet Fever.	Budworth	A Two cases occurred in May, the infection being from the adjoining district: one case was removed to Hospital, the other declined removal; later, in October, renewed infection occurred, this time from Comberbach, and 10 cases resulted. B Visited all cases, and managed to secure removal of 5 cases in all to Hospital. Final disinfection of premises, clothing, bedding &c was carried out.	A. 7 houses 12 cases. B. No death.
29	May.	Typhoid Fever.	Latchford Without	A An obscure isolated case, for which no cause was found. B Visited; the patient was removed to Hospital, and premises, bedding &c. finally disinfected.	A. One house. One case. B. No death.
30	May.	Diph- theria.	Norley	A It is probable the water supply may have caused these cases, but this is by no means certain. B Visited; they were allowed to remain at home. Premises, bedding &c. were finally disinfected.	A. One house. Two cases. B. One death.
31	May.	Diph- theria.	Stockton Heath.	A Infection attributed to Warrington. B This patient was, by private arrangement, removed to Warrington Fever Hospital.	A. One house. One case. B. No death.
32	May June.	Diph- theria.	Helsby.	A Source of infection obscure. B Visited, removal declined; final disinfection of premises &c carried out.	A. One house. Two cases. B. No death.

## TABULAR SUMMARY.—Continued.

No	Date	Disease	Locality	A. Source of Infection	A Extent of Out-break
				B. Action taken	B Result C Remarks
33	May	Diphtheria	Latchford Without	A No cause ascertained. B A Sporadic case; removal to Hospital declined, final disinfection of premises, &c, carried out.	A. One house. One case. B. <i>One death.</i>
34	June	Diphtheria	Halton	A An obscure case; no cause for disease found. B Visited; removal to Hospital declined; the usual preventive orders issued, and final disinfection of premises, clothing, bedding, &c carried out.	A. One house. One case. B. No death.
35	June to Dec.	Scarlet Fever	Halton	A Infection believed to have come from Runcorn in the first cases; spreading afterwards by School infection. B Visited all cases, and was able to remove no less than 9 out of the 11 cases into Hospital; one case died in Hospital. All premises, clothing, bedding, &c finally disinfected. Four of the cases occurred in one house and three in another.	A. 6 houses. 11 cases. B. <i>One death.</i>
36	July	Diphtheria	Appleton	A No sanitary defects were found. B Visited, and removed the patient to Hospital. The usual preventive orders were issued, and final disinfection of premises &c, carried out.	A. One house. One case. B. No death.
37	July	Scarlet Fever	Latchford Without	A Infection from Warrington. B Visited, and removed the patient to Isolation Hospital. Final disinfection of premises, &c carried out.	A. One house. One case. B. No death.

## TABULAR SUMMARY —Continued.

No.	Date	Disease.	Locality	A. Source of Infection	A. Extent of Out-break
				B. Action taken.	B. Result C. Remarks
38	July.	Scarlet Fever.	Norley.	A Infection probably from Frodsham cases. B Visited; removal to Hospital declined; the usual preventive orders issued, and final disinfection of premises, bedding, &c, carried out.	A. One house. One case. B. No death.
39	Aug. to Dec.	Scarlet Fever.	Stockton Heath	A Source of infection from Warrington, where this disease was very prevalent at the time. B Visited all the cases; removal to Hospital was declined in all but one case, which was removed; most of the cases were in houses which afforded good isolation. The usual preventive orders were issued, and final disinfection of premises, clothing, bedding &c was carried out.	A. 6. houses. 6 cases. B. No death.
40	Aug.	Scarlet Fever.	Walton Inferior	A This was really an extension of the Stockton Heath outbreak, preceding this (No 39). B Visited all cases; removal to Hospital declined the usual preventive orders were issued, and final disinfection of premises, bedding, &c., carried out.	A. Three houses Three cases. B. No death.
41	Aug.	Diphthiria.	Clifton.	A Source of infection obscure, but complaint was made of smells arising from the sewage on the meadow below the houses. B Visited; all 4 cases were at once removed to Isolation Hospital the usual preventive orders were issued, and final disinfection of premises, clothing, bedding &c carried out.	A. One house. Four cases. B. No death.

## TABULAR SUMMARY.—Continued.

No.	Date	Disease	Locality	A Source of Infection	A. Extent of Out-break
				B Action taken	B. Result C. Remarks
42	Aug.	Typhoid Fever	Moore	A No insanitary conditions were present. B Removal to Hospital was declined; the usual preventive measures were adopted, and final disinfection of premises, bedding &c carried out.	A. One house. One case. B. No death.
43	Oct.	Diphtheria	Stockton Heath	A Source of infection not ascertained. B Visited; removal to Isolation Hospital declined; the usual preventive orders issued, and final disinfection of premises, bedding &c, carried out.	A. One house. One case. B No death.
44	Nov.	Scarlet Fever	Clifton	A Source of infection obscure. B Removal to Hospital declined; a serious case, which terminated fatally, from complications; all usual preventive measures were adopted, and final disinfection of premises, bedding &c, was carried out	A. One house. One case. B. <i>One death.</i>
45	Nov.	Typhoid Fever	Helsby	A No appreciable cause for the disease. B Visited; removal to Hospital declined; the family went away to avoid infection; final disinfection of premises, bedding &c was carried out.	A. One house. One case. B. No death.
46	Nov.	Diphtheria	Whitley Inferior	A Source of infection obscure. B Visited; the patient was removed to Hospital, and final disinfection of premises, bedding &c, carried out.	A. One house One case. B. No death.



## TABULAR SUMMARY. -Continued.

No.	Date	Disease	Locality	A. Source of Infection	A. Extent of Out-break
				B. Action taken	B. Result C. Remarks
47	Nov.	Typhoid Fever.	Thelwall.	A A sailor, who contracted the disease on board ship and came home ill. B Visited; removal to Hospital declined; the usual preventive orders were issued, and final disinfection of premises, bedding &c, carried out.	A. One house. One case. B. No death.
48	Dec.	Diphtheria.	Antrobus.	A Disease caused by a generally insanitary condition of farm premises, and probably a polluted water supply. B Visited, and reported adversely to your Council on the sanitation, recommending analysis of water. These matters will be undertaken in the coming year, and an amendment of the defects carried out. Removal to Hospital was declined, and final disinfection of premises, bedding &c will be carried out when recovery has taken place.	A. One house. One case. B. No death.
49	Dec.	Diphtheria.	Stretton.	A No appreciable cause for disease was discovered. B The case proved rapidly fatal; a delicate child; premises, clothing, bedding &c, were disinfected after the death occurred.	A. One house. One case. B. No death.

*Remarks on preceding Summary, and on Infectious Diseases during 1908.*

The foregoing Summary contains the principal facts in connection with the 49 separate outbreaks of infectious diseases, which have occurred during 1908, in 32 different Townships out of the 40 which constitute the area of your District Council. In addition, there were 23 cases of Erysipelas in 13 Townships, which are not included in the Summary, and which call for no comment here, no special sanitary proceedings having been undertaken in reference to them.

The total number of cases of Infectious Diseases notified during 1908 was 223, (being 9 more than in 1907). In Table III. in Appendices will be found set out the various diseases and the Townships in which they occurred. In the following Table I have put down the numbers of cases in successive years, since the adoption of compulsory notification, viz :—

In 1891	...	108 cases	In 1900	..	70 cases
„ 1892	...	124 „	„ 1901	...	124 „
„ 1893	...	308 „	„ 1902	...	226 „
„ 1894	...	202 „	„ 1903	...	124 „
„ 1895	...	206 „	„ 1904	...	229 „
„ 1896	...	246 „	„ 1905	...	260 „
„ 1897	...	158 „	„ 1906	...	313 „
„ 1898	...	98 „	„ 1907	...	214 „
„ 1899	...	146 „	„ 1908	...	223 „

The average number of cases during the preceding 17 years is 185; the number in 1908 is thus 38 above the average of the preceding 16 years.

It is somewhat difficult at present to judge of the effect of the Isolation Hospital upon the prevalence of Infectious Diseases, for several reasons. In the first place it was opened at a time when the district was already “suffering from the greatest invasion of infectious disease in the history of your district”, (see last year’s Report) and the entire area had been, to an extent, infected; in the second place, the number of beds available was only half the customary number, and hence the isolation of cases could only be carried out in that diminished proportion; and thirdly, the population, as yet unaccustomed to having their children removed to Isolation Hospitals, at first only gave a grudging assent to removal, or at times, offered the

stoutest resistance to any proposal to have them taken from home. This was especially the case in Weston and Norley. I am glad to say this feeling is gradually dying away, and that refusal is by no means so common an occurrence as formerly.

The 223 notified cases consisted of the following diseases :—

Smallpox	...	0 cases	Scarlet Fever	..	145 cases
Diphtheria	...	44 "	Typhoid Fever...		10 "
Erysipelas	..	23 "	Puerperal Fever		1 "
Total					223 cases

In reference to the separate diseases, a few remarks will suffice :—

(a) *Smallpox* :—No case of this disease has occurred since 1905; but the Smallpox Hospital at Moore is kept in order, with its own separate Washington-Lyon steam disinfecter, for any case that may arise.

(b) *Measles* :—This diseases is not notifiable in your district, but it was fairly prevalent, although only 3 deaths occurred from it, and several schools were closed in consequence of epidemics.

(c) *Scarlet Fever* :—No less than 145 cases of this disease were notified, compared with 105 cases in 1907, and 179 in 1906. It accounted for 8 deaths, and several schools, especially in the Frodsham area, were closed in consequence of outbreaks. The largest outbreak occurred in the Frodsham and Frodsham Lordship Townships, where the disease was prevalent during the greater portion of the year. There are only 8 beds in the Isolation Hospital for this disease, and when it assumes an epidemic form, it is quite impossible to deal with all the cases arising; in fact it seems the wiser policy, in such a case, to devote the Hospital to the isolation of single cases arising in other localities, with the view of preventing the disease from becoming epidemic there.

Altogether, 48 cases of Scarlet Fever were treated in the Isolation Hospital, and 3 deaths occurred in Hospital; the other 5 deaths occurred in patients who were treated at home. The type of disease appeared to be more severe than usual this year, many very severe cases occurring, but ultimately recovering. In 1906, when 179 cases occurred, not a single death took place.

I append the number of cases and deaths, for the last 10 years, for purposes of comparison :—

In 1907, 105 cases, 3 deaths	In 1902, 57 cases, 2 deaths
„ 1906, 179 „ 0 „	„ 1901, 39 „ 1 „
„ 1905, 110 „ 1 „	„ 1900, 33 „ 0 „
„ 1904, 101 „ 0 „	„ 1899, 85 „ 6 „
„ 1903, 45 „ 1 „	„ 1898, 34 „ 1 „

Or, an average of 78·8 cases per annum, with 1·5 deaths, for the preceding 10 years.

Below is a Table giving the various Townships in which the disease occurred, with the number of cases and deaths :—

Locality						No of Cases	No. of Deaths.
<i>Runcorn Sub-District</i>	{	Clifton	...	...	...	1	1
		Halton	...	...	...	11	1
		Sutton	...	...	...	7	...
		Weston	...	...	...	19	..
<i>Frodsham Sub-District</i>	{	Frodsham	...	...	...	46	2
		Frodsham Lordship	...	...	...	13	..
		Kingsley	...	...	...	1	...
		Norley	...	...	...	1	...
<i>Budworth Sub-district</i>	{	Budworth	...	...	...	11	...
		Grappenhall	...	...	...	3	1
		Latchford Without	..	...	...	1	...
		Moore	...	...	...	2	...
		Newton-by-Daresbury	...	...	...	2	...
		Stockton Heath	...	..	...	18	1
		Stretton	...	...	...	2	...
		Walton Inferior	...	...	...	4	..
		Whitley Superior...	...	...	...	1	...
		Hatton	...	...	...	2	2
TOTALS ..						145	8

Details and particulars of these outbreaks are given in the Tabular Summary, together with the action taken and results.

(d) *Whooping Cough*: This disease is not notifiable in your district. It has, however, been very prevalent in 1908, and has caused 6 deaths. Concurrently with Measles, it led to the closing of several Infants' Schools.

(e) *Diphtheria*:—This disease, although not so prevalent as in the several preceding years, has occurred in 44 cases, and caused 6 deaths. The largest number was in Frodsham, where 11 cases occurred. Norley only had one case, compared with its 20 cases and 5 deaths in 1907.

I append for purpose of comparison, a statement of cases and deaths for the last 10 years:

In 1907, 79 cases, 13 deaths	In 1902, 35 cases, 7 deaths
„ 1906, 84 „ 3 „	„ 1901, 44 „ 8 „
„ 1905, 49 „ 5 „	„ 1900, 17 „ 6 „
„ 1904, 50 „ 8 „	„ 1899, 37 „ 2 „
„ 1903, 27 „ 2 „	„ 1898, 48 „ 2 „

Or, an average of 47·0 cases, with 5·6 deaths, for the preceding 10 years. The number both of cases and deaths is very near the average.

Below is a Table giving the various Townships in which the disease has occurred, with the number of cases and deaths:—

Locality.						No. of Cases.	No. of Deaths
Runcorn Sub-district	{	Aston	...	...	...	1	...
		Clifton	...	...	...	5	...
		Halton	...	...	...	1	...
		Weston	...	...	...	7	1
Frodsham Sub-district	{	Frodsham	...	...	...	11	1
		Frodsham Lordship	...	...	...	1	...
		Helsby	...	...	...	2	...
		Norley	...	...	...	2	1
Budworth Sub-district	{	Antrobus	...	...	...	2	...
		Appleton	...	...	...	1	...
		Latchford-Without	...	...	...	1	1
		Moore	...	...	...	2	1
		Stockton Heath	...	...	...	3	...
		Stretton	...	...	...	1	1
		Crowley	...	...	...	3	...
		Whitley Inferior	...	...	...	1	...
TOTALS ...						44	6

It is to be hoped that the diminution of this disease as compared with previous years, will be maintained. No special insanitary conditions were present to account for it, and school infection appeared to play a prominent part in the principal outbreaks. Most of the cases were distinctly specific, with diphtheritic membrane, and the ordinary accompaniments.

Anti-diphtheritic serum is supplied, free of cost, for poor patients, on application to me, but has not been greatly resorted to in the past year, probably because it is now so much easier to obtain than formerly.

(f) *Croup* :—One death occurred from this disease, but was classified under “Diphtheria”, being evidently a case of laryngeal diphtheria, or Membranous Croup.

## FEVERS.

(g) *Typhus Fever* :—No cases occurred.

(h) *Typhoid Fever* ;—(*Enteric* :)—Only 10 cases of this disease were notified during 1908 ; no deaths occurred. This is distinctly satisfactory, as no death from this disease has now occurred for over two years. The principle details of these outbreaks have been given in the preceding Tabular Summary, and no reason exists for special comment.

I give, for purposes of comparison, a Table showing the number of cases and deaths for the preceding 10 years.

In 1907... 6 cases no deaths	In 1902... 13 cases 4 deaths
„ 1906... 16 „ 6 „	„ 1901... 27 „ 4 „
„ 1905... 17 „ 3 „	„ 1900... 15 „ 4 „
„ 1904... 10 „ 3 „	„ 1899... 14 „ 3 „
„ 1903... 1 „ 0 „	„ 1898... 6 „ 1 „

Or, an average of 11.5 cases, with 2.8 deaths, during the preceding ten years.

The various cases occurred in the following Townships Halton, 1 ;— Weston, 2 ;— Helsby, 1 ;— Budworth, 1 ;— Grappenhall, 2 ;— Latchford Without, 1 ;— Moore, 1 ;— and Thelwall, 1.

(i) *Other continued Fevers* ; No cases were notified.

(j) *Epidemic Influenza* ;—Only one death was registered as having occurred from this disease.



It was however, much in evidence, and, in several places, contributed to the necessity for the closing of Schools in conjunction with Measles and Mumps.

(k) *Cholera* :—Nothing occurred.

(l) *Plague* :—Nothing occurred.

(m) *Diarrhoea &c* :—Only 4 deaths occurred from diarrhoeal diseases, being, with the exception of last year, the lowest number of deaths, from this cause, ever recorded in your district.

(n) *Enteritis* :—No deaths occurred.

(o) *Puerperal Fever* :—Only one case of this disease was notified, and terminated in recovery. The usual action was taken in regard to the midwife who belonged to an adjoining Council area, and to whose Medical Officer of Health I made the necessary and proper representations.

(p) *Erysipelas* :—23 cases were notified; no deaths occurred.

(q) *Chicken Pox* :—No information reached me as to the presence of this disease, but I saw a few cases when investigating School conditions.

(r) *Anthrax* :—No cases in human beings occurred, and the cases in cattle which were notified to me by the Police Authorities, were dealt with in accordance with Police Regulations, and certified to me as having been so dealt with.

---

### SECTION III.

AN ACCOUNT OF THE SANITARY CONDITION  
OF THE DISTRICT AT THE END OF THE YEAR  
1908.

AS REGARDS,—

(a) *Zymotic Diseases* :—The formidable outbreak of Scarlet Fever in the Frodsham area appeared to be drawing to a close, but 6 cases were notified so late as in

December. In several Townships, Scarlet Fever and Diphtheria were present, Budworth, Stockton Heath, Frodsham, Halton and Weston being the principal ones.

The Isolation Hospital at Dutton had been practically full for the greater portion of the year, fresh candidates for vacant beds being almost always found.

(b) *General Hygienic Conditions :—*

1 WATER SUPPLIES :—In a former Report I have indicated the very large extent by which the area of your Council is supplied by first class drinking waters from the Liverpool and the Warrington water supplies, which abut upon, or pass through your area. Many of your Townships are entirely provided from these, or other sources, of good water, and I am very pleased to report that the Township of Norley is at last, to be supplied with the continuous and uniform water supply derived from the Liverpool Vyrnwy scheme. The water-mains have been completed, and 137 houses, including 3 farms, have been connected therewith.

Also, at Aston Heath, a further attempt is being made to improve the water supply.

The public well in Kingswood has been repaired with a view to preventing pollution,

Various private water supplies have been analysed (see Appendix on Water Analyses) and necessary action will follow, where required.

2 SEWERAGE AND SEWAGE DISPOSAL :—

In Weston, no conclusion has yet been arrived at as to disposal of night soil ; about 13 privies have been converted to water carriage system ; this change should be extended (see last report).

In Clifton there is need of improvement in dealing with the sewage from the Rock-Savage area, in which there are 34 houses.

At Halton, the new Sewerage scheme should be commenced very soon, a contractor having received instructions to proceed.

At Frodsham, the work of Sewerage alterations is still in hand.

Helsby Sewerage works continues to give satisfactory results.

An Extension of Sewerage has been made in Hatton Village, and improvements made in the Sewerage arrangements in Runcorn Road, Moore.

3 RIVERS POLLUTION :—Nothing, beyond inspection and routine work, has been done during 1908.

4. INFECTIOUS DISEASES PREVENTION,—In the Tabular Summary will be found an account of the chief work done under this heading, during the year. I have already discussed the effect of the Isolation Hospital, and will only add the remark that, although in the presence of a large Epidemic, such as that in the Frodsham area, it fails to deal effectively with its progress, it undoubtedly assists in the suppression of outbreaks, if only the first cases are discovered and removed early. It is the undiscovered cases which most frequently lead to the larger outbreaks, being left "at large" until they have caused a fairly general infection of a Township or School.

Altogether, 62 cases were admitted to Hospital during 1908, as follows,—

Scarlet Fever ...	... 48 cases.
Diphtheria ...	... 10 „
Typhoid Fever ...	... 4 „
	<hr/>
	62
	<hr/>

Three deaths, all from Scarlet Fever, occurred in the Isolation Hospital during 1908.

5. DISINFECTION :—The method adopted for disinfection of premises, after infectious diseases, is the Formalin Spray; all clothing, bedding &c, is removed to the disinfecting chamber at Dutton Isolation Hospital; while for a possible Smallpox outbreak, the Washington Lyon disinfecting apparatus is kept efficient at the Moore Smallpox Hospital.

I append a few observations on individual Townships, as follow :—

## RUNCORN SUB-DISTRICT.

### ASTON and ASTON GRANGE.

An attempt is being made to improve the Water-Supply to Aston-Heath, Aston :—

One case of Diphtheria, and 2 of Erysipelas occurred : no death.

### CLIFTON.

Some better system for dealing with the Sewage from the Rocksavage portion of the Parish, (which contains 34 houses) should be provided, this question is under consideration :—

One case of Scarlet Fever, with one death ; and 5 cases of Diphtheria, with no death, occurred.

### HALTON.

The carrying out of Sewerage Works in this Parish has been placed in the hands of a Contractor, and the work will be commenced shortly :—

Eleven cases of Scarlet Fever, with one death, and one case of Diphtheria, no death, and one case of Typhoid Fever, no death, occurred.

### NORTON.

No comment required :—

No infectious diseases occurred.

### STOCKHAM.

No comment required :—

No infectious diseases occurred.

### SUTTON.

No comment required :—

7 cases of Scarlet Fever, with no death occurred.

### WESTON.

Nothing has, as yet been decided upon with regard to the disposal of night-soil and house refuse;—

Thirteen common privies have been put upon the water carriage system, since last Report :—

19 cases of Scarlet Fever, with no death, 7 cases of Diphtheria, 1 death, and 2 cases of Typhoid Fever, no death, occurred.

## **FRODSHAM SUB-DISTRICT.**

### **ALVANLEY.**

The question of an improved water supply to this parish has not yet been considered :—

No infectious diseases occurred.

### **FRODSHAM.**

The work of carrying out the alteration of the Sewerage System, is still in hand :—

46 cases of Scarlet Fever, with 2 deaths, and 11 cases of Diphtheria, with one death occurred.

### **FRODSHAM LORDSHIP.**

No comment required :

13 cases of Scarlet fever, no death, and 1 case of Diphtheria no death, occurred.

### **HELSBY.**

The Water and Sewerage Works still continue to work satisfactorily :—

No cases of Scarlet Fever, 2 of Diphtheria, with no death, and 1 of Typhoid fever, no death, occurred.

### **KINGSLEY.**

No comment required :—

One case of Scarlet fever, no death, occurred.

### **KINGSWOOD.**

A Public Well in this Parish has been repaired and improved so as to protect it from pollution :—

No infectious diseases occurred.

## MANLEY.

No comment required : —

No infectious diseases occurred.

## NEWTON-BY FRODSHAM.

No comment required :—

No infectious diseases occurred.

## NORLEY.

The work of laying water mains in this parish has been completed, and 137 houses including 3 Farms, have been connected therewith :—

One case of Scarlet fever, no death, and 2 cases of Diphtheria, with 1 death, occurred.

**BUDWORTH SUB-DISTRICT.**

## ACTON GRANGE.

No comment required :—

No infectious diseases occurred.

## APPLETON.

No comment required.

One case of diphtheria, no death, occurred.

## DUTTON.

No comment required.

No infectious diseases occurred.

## GRAPPENHALL.

No comment required.

3 cases of Scarlet Fever, with 1 death, occurred.

## LATCHFORD-WITHOUT.

No comment required.

One case of Scarlet Fever, no death, and one case of Diphtheria, with 1 death, occurred.

## HATTON.

The Sewer in Hatton Village has been extended.

Two cases of Scarlet Fever, with 2 deaths, in the same family occurred.

## KECKWICK.

No comment required.

No infectious diseases occurred.

## MOORE.

A length of Sewer in Runcorn Road in this parish has been improved.

2 cases of Scarlet Fever, no death, and 2 cases of Diphtheria, with 1 death, occurred.

## NEWTON-BY-DARESBUY.

No comment required.

2 cases of Scarlet Fever, no death, occurred.

## PRESTON O'-TH'-HILL.

No comment required.

No infectious diseases occurred.

## STOCKTON HEATH.

Considerable extensions of residential property, and laying down of new streets, have taken place.

18 cases of Scarlet Fever, with 1 death, and 3 cases of Diphtheria, with no death, occurred,

## STRETTON.

No comment required.

2 cases of Scarlet Fever, no death, and 1 case of Diphtheria, with 1 death, occurred.

## THELWALL.

No comment required.

No infectious diseases occurred.



## WALTON-INFERIOR.

No comment required.

4 cases of Scarlet Fever, with no death, occurred.

## WALTON-SUPERIOR.

No comment required.

No infectious diseases occurred.

## WHITLEY INFERIOR.

No comment required.

One case of diphtheria, with no death, occurred.

## WHITLEY-SUPERIOR.

No comment required.

One case of Scarlet Fever, with no death, occurred.

## CROWLEY.

No comment required.

Three cases of Diphtheria, with no death, occurred.

## SEVEN OAKS, BARTINGTON, and DARES BURY.

No comment required.

No infectious diseases occurred.

---

**SECTION IV.**

AN ACCOUNT OF ENQUIRIES MADE BY THE  
MEDICAL OFFICER OF HEALTH, AS TO  
CONDITIONS INJURIOUS TO HEALTH WITH-  
IN THE DISTRICT, AND OF PROCEEDINGS  
WHICH HAVE BEEN TAKEN, OR ADVISED  
UPON, UNDER ANY STATUTES.

Most of the personal action which I have undertaken is embodied in the preceding sections of this report.

I will therefore proceed to set down a tabulated statement of the work carried out by your Sanitary Inspector, alike in conjunction with myself, and also on his own responsibility, under the following Statutes, viz: The Public Health Act, 1875; the Public Health (Water) Act, 1878; the Contagious Diseases (Animals) Act, 1878; the Dairies, Cowsheds, and Milk Shops Order, 1885; and the Canal Boats Acts, 1877 and 1884; also under any other Acts relating to Public Health; and lastly, under the Factories and Workshops Act, 1901.

STATEMENT OF THE INSPECTOR OF NUISANCES  
ETC., OF SANITARY WORK DONE, AND ACTION  
TAKEN BY HIM RELATING TO OTHER MATTERS  
DURING THE YEAR ENDING DECEMBER 31st., 1908.

UNDER THE  
PUBLIC HEALTH ACT, 1875, AND OTHER ACTS.

Total Number of Notices and other Documents written and posted by Inspector ... ..	428
.. .. reports by Inspector to District Council .. ..	76
.. .. reports by Inspector to District Medical Officer of Health ... ..	6
.. .. reports by Inspector to County Medical Officer of Health ... ..	4
.. .. occupied houses supplied with water from water mains ... ..	138
.. .. occupied houses supplied with water from water mains during the past 23 years ... ..	1202
.. .. public pumps repaired... ..	2
.. .. public wells improved ... ..	1
.. .. overcrowding of houses abated ... ..	1
.. .. rooms disinfected by Inspector, including 6 schools ... ..	189
.. .. rooms disinfected by Inspector during the past 9 years ... ..	1218
.. .. lots of bedding removed and put through disinfectant ... ..	51
.. .. lots of bedding removed and put through disinfectant during the past 9 years	506
.. .. sewers extended ... ..	1
.. .. sewers improved ... ..	3
.. .. manhole covers to sewers improved ...	4

Total Number of ventilators to sewers removed and re-erected ... ..	1
.. .. drainage connections to sewers ..	3
.. .. sewage drainage to premises re-constructed ... ..	21
.. .. sewage drainage to premises improved	
.. .. sewage cesspools abolished ...	1
.. .. privies with open ash-pits converted into water closets... ..	13
.. .. cesspool privies put upon the pail system ... ..	1
.. .. privies with open ashpits repaired ...	11
.. .. privies with open ash-pits emptied after notice being served ... ..	9
.. .. slaughter house licenses renewed ...	2
.. .. certificates of registration for milk-selling granted ... ..	2
.. .. petroleum licenses granted .. ..	1
.. .. carbide of calcium granted ... ..	2
.. .. game licenses renewed... ..	1
.. .. examinations of carcasses of meat previous to the same being disposed of for food .. ..	2
.. .. smoke nuisances abated ... ..	1
.. .. legal proceedings taken, and fines inflicted in chimney-firing cases ...	1

#### PUBLIC HEALTH (WATER) ACT, 1878.

Total Number of Water Certificates granted by District Council during the year ending December 31st, 1908 ... ..	3
.. .. houses occupied under such certificates	6
.. .. ditto supplied with water from water-mains ... ..	6
.. .. ditto supplied with water from water-mains during the past 22 years ...	1252
.. .. certificates granted from June 3rd, 1879, to December 31st, 1908 ..	776
.. .. houses occupied under such certificates within the same period ... ..	1753
.. .. Samples of water collected by Inspector and submitted to County Analyst for chemical analysis ... ..	14
.. .. Samples of effluents collected and submitted for chemical analysis ...	5
.. .. Samples of water collected and submitted for bacteriological analysis only ... ..	2

## CANAL BOATS ACTS, 1877 AND 1884.

Total number of boats inspected during the year ending			
December 31st, 1908, whilst passing through the District		...	22
„	„	boats conforming with Acts and Regulations made thereunder	.. ... 22
„	„	women with boats inspected	... ... 17
„	„	children between 5 and 12 years of age	9
„	„	„ 5 years of age and under	... 7

CONTAGIOUS DISEASES (ANIMALS) ACT, 1878.  
DAIRIES, COWSHEDS & MILKSHOPS ACT, 1885.

Total number of persons registered to carry on the trade	of cowkeepers and dairymen	during the year ending December	31st, 1908	...	...	...	2
„	„	persons on the register on the above-named date	...	...	...	...	201

(Signed),

JAMES FARRINGTON,

Inspector of Nuisances, Canal Boats,  
Dairies, Cowsheds, Milkshops, and  
Workshops,

THE COTTAGE,

ASTON,

Dated, February, 1908.

VIA WARRINGTON.

**SECTION V.**

AN ACCOUNT OF THE SUPERVISION EXERCISED BY HIM, OR ON HIS ADVICE, FOR SANITARY PURPOSES, OVER HOUSES AND PLACES WHICH THE DISTRICT COUNCIL HAVE POWER TO REGULATE.

(1) No cases of "overcrowding" have been brought to my notice, with a view to my granting a certificate for abatement, or legal action to be taken thereon; one case of "overcrowding" was abated without legal action.

(2) I have not been called upon to give evidence, during 1908, with reference to any Police Court proceedings.

(3) I have not been called upon to grant any certificate in reference to premises "unfit for human habitation."

(4) The usual examinations of Lodging Houses, Dairies, Cowsheds, Milkshops, &c., and Canal Boats were carried out : no action was required to be undertaken.

(5) Several cases of Anthrax in cattle were notified during the year 1908, but no cases in human beings. The Police Authorities in your District are very efficient and carry out the regulations in reference to Anthrax in cattle in a very satisfactory manner. An acknowledgement of this fact is due to them ; it is a thankless and disagreeable task, which they carry out with credit.

---

## SECTION VI.

### A RECORD OF THE ACTION TAKEN BY HIM, OR ON HIS ADVICE IN REFERENCE TO OFFENSIVE TRADES, AND TO FACTORIES AND WORKSHOPS.

(1) During 1908, no complaints were made to me in reference to (a), offensive trades, nor (b), to factories and workshops.

(2) In connection with the Factory and Workshops Act, 1901, the various establishments within the district which are under the control of the District Council have been inspected ; no action was called for.

(3) Only about a dozen out-workers exist in your district ; no insanitary conditions have been ascertained affecting them.

(4) No underground bakehouses are to found in your district.

Appended to this report are the Statistical Tables I, II, III, IV, and V, as required by the Local Government Board.

A further Appendix contains the 11 analyses (see Appendix VI.) of drinking waters which have been submitted to the County Analyst during the year 1908.

I have the honour to be,

Mr. Chairman and Gentlemen,

Your obedient servant,

JOSEPH ADAMS,

Medical Officer of Health.

WARRINGTON,

March, 1909.

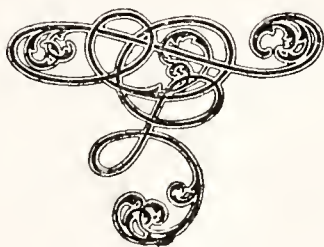






TABLE I.

Vital Statistics of Whole District during 1908 and Previous Years.

## RUNCORN RURAL DISTRICT.

YEAR.	Population estimated to Middle of each Year.	BIRTHS.		TOTAL DEATHS REGISTERED IN THE DISTRICT.				TOTAL DEATHS IN PUBLIC INSTITUTIONS IN THE DISTRICT	Deaths of Non-residents registered in Public Institutions in the District	Deaths of Residents registered in Public Institutions beyond the District	NETT DEATHS AT ALL AGES BELONGING TO THE DISTRICT.	
		Number	Rate*	Under 1 year of age		At all ages.					Number	Rate*
				Number	Rate per 1,000 Births registered	Number	Rate*					
1	2	3	4	5	6	7	8	9	10	11	12	13
1898	22973	613	26.6	91	132.1	358	15.5	29	14	?	344	14.9
1899	23062	695	25.8	81	136.4	367	15.9	21	14	?	353	15.3
1900	23151	629	27.1	82	112.3	392	16.9	36	21	2	379	16.3
1901	23203	634	27.0	70	110.4	312	13.4	28	16	4	300	12.9
1902	23595	644	27.7	74	114.9	320	13.5	22	14	5	311	13.1
1903	23871	654	27.4	74	113.1	320	13.8	20	14	2	308	12.9
1904	24130	645	26.6	88	136.4	398	16.4	32	14	8	386	15.9
1905	24416	608	24.9	75	123.3	322	12.7	18	15	5	312	12.7
1906	24753	671	27.1	60	89.4	334	13.4	32	20	4	318	12.8
1907	25035	638	25.4	64	84.6	356	14.2	34	23	5	338	13.5
Averages for years 1898-1907	23818	633	26.5	75	115.3	348	14.5	27	16	4	375	14.0
1908	25350	695	26.2	62	93.2	350	14.2	51	31	6	325	12.8

\* Rates in columns 4, 8 and 13, calculated per 1,000 of estimated population.

NOTE.—The deaths to be included in Column 7 of this table are the whole of those registered during the year as having actually occurred within the district or division. The deaths to be included in Column 12 are the number in Column 7, corrected by the subtraction of the number in Column 10 and the addition of the number in Column 11.

By the term "Non-residents" is meant persons brought into the district on account of sickness or infirmity, and dying in public institutions there; and by the term "Residents" is meant persons who have been taken out of the district on account of sickness or infirmity, and have died in public institutions elsewhere.

The "Public institutions" to be taken into account for the purposes of these Tables are those into which persons are habitually received on account of sickness or infirmity, such as hospitals, workhouses and lunatic asylums. A list of the institutions in respect of the deaths in which corrections have been made should be given on the back of this Table.

Area of District in acres  
(exclusive of area  
covered by water.) } 49,309 acres.

Total population at all ages—23,203  
Number of inhabited houses—4774  
Average number of persons per house—4.9

At Census of 1901

{ See over

I. Institutions within the District receiving sick and infirm persons from outside the District.	II. Institutions outside the District receiving sick and infirm persons from the District.	III. Other Institutions, the deaths in which have been distributed among the several localities in the District.
<p>(1). UNION WORKHOUSE, DUTTON, in which 21 deaths occurred, be- longing to Runcorn Urban District.</p> <p>(2). CROSSLEY SANATORIUM, KINGSWOOD, in which 10 deaths occurred, in persons not belonging to this District.</p>	<p>LIVERPOOL ROYAL INFIRMARY, in which 1 death occurred, be- longing to this District.</p> <p>LIVERPOOL EYE AND EAR INFIRMARY, in which one death occurred, be- longing to this District.</p> <p>WARRINGTON INFIRMARY, in which four deaths occurred, be- longing to this District.</p>	<p>ISOLATION HOSPITAL, DUTTON, in which 3 deaths occurred be- longing to this District; cause of deaths, Scarlet Fever.</p>

Is the Union Workhouse within the District? Yes, at DUTTON.

TABLE II.

Vital Statistics of separate Localities in 1908 and previous years.

## RUNCORN RURAL DISTRICT.

YEAR.	1.—The Whole District				2.—Runcorn Sub-district.				3.—Frodsham Sub-district.				4.—Budworth Sub-district.			
	Population estimated to middle of each year.	Births registered.	Deaths at all Ages	Deaths under 1 year.	Population estimated to middle of each Year.	Births registered.	Deaths at all Ages	Deaths under 1 year.	Population estimated to middle of each Year.	Births registered.	Deaths at all Ages	Deaths under 1 year.	Population estimated to middle of each Year.	Births registered.	Deaths at all Ages	Deaths under 1 year.
	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.
1898 ... ..	22973	613	344	91	4780	117	51	17	8531	229	135	37	9662	267	172	37
1899 ... ..	23062	595	353	81	4704	129	53	11	8496	221	141	17	9862	245	168	43
1900 ... ..	23151	629	379	82	4688	125	79	26	8461	253	132	30	10062	251	181	26
1901 ... ..	23203	634	300	70	4552	156	53	24	8427	247	114	23	10224	231	128	23
1902 ... ..	23536	644	311	74	4624	132	60	11	8576	251	102	22	10336	261	149	39
1903 ... ..	23871	654	308	74	4691	130	64	11	8709	242	108	31	10471	282	136	32
1904 ... ..	24130	645	386	88	4757	133	74	16	8827	236	125	29	10546	276	187	43
1905 ... ..	24416	608	322	75	4839	139	56	17	8948	244	123	31	10628	225	143	27
1906 ... ..	24753	671	318	60	4905	125	59	16	9059	228	117	20	10788	313	158	24
1907 ... ..	25035	638	338	54	4981	127	52	10	9178	224	100	17	10875	287	186	27
Averages of } Years 1898 } to 1907. }	23818	633	335	75	4746	131	61	16	8721	137	119	26	10345	264	160	31
1908 ... ..	25350	665	325	62	5046	119	55	13	9273	218	115	24	11032	328	155	25

NOTES.—(a) The separate localities adopted for this table should be areas of which the population are obtainable from the census returns, such as wards, parishes or groups of parishes, or registration sub-districts. Block 1 may, if desired, be used for the whole district; and blocks 2, 3, &c., for the several localities. In small districts without recognised divisions of known population this Table need not be filled up.

(b) Deaths of residents occurring in public institutions beyond the district are to be included in sub-columns *c* of this table, and those of non-residents registered in public institutions in the district excluded. (See note on Table I. as to meaning of terms "resident" and "non-resident.")

(c) Deaths of residents occurring in public institutions, whether within or without the district, are to be allotted to the respective localities according to the addresses of the deceased.

(d) Care should be taken that the gross totals of the several columns in this Table respectively equal the corresponding totals for the whole districts in Tables I. and IV.; thus, the totals of sub-columns *a*, *b*, and *c* should agree with the figures for the year in the columns 2, 3, and 12, respectively, of Table I.; the gross total of the sub-columns *c* should agree with the total of column 2 in Table IV., and the gross total of sub-columns *d* with the total of column 3 in Table IV.





# TABLE III.

Cases of Infectious Diseases notified during the Year, 1903.

## THE WHOLE DISTRICT

NOTIFIABLE DISEASE.	CASES NOTIFIED IN WHOLE DISTRICT.							TOTAL CASES NOTIFIED IN EACH SUB-DISTRICT.			NUMBER OF CASES REMOVED TO HOSPITAL FROM EACH LOCALITY.																		
	At all Ages.	At Ages†—Years						RUNCORN.	FRODSHAM.	BUDWORTH.	APPLETON.	BUDWORTH.	CLIFTON.	FRODSHAM.	FRODSHAM L. RD.	GRAPPENHALL.	HALTON.	KINGSLEY.	LATCHFORD WITHOUT.	NEWTON BY-FRODSHAM.	STOCKTON HEATH.	WALTON INFERIOR.	WESTON.	WHITLEY INFERIOR.				TOTAL CASES REMOVED TO HOSPITAL.	
		Under 1	1 to 5	5 to 15	15 to 25	25 to 65	65 and upwards																						
Smallpox ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cholera... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria including } Membranous croup	44	1	8	24	6	5	...	14	16	14	1	...	4	2	...	...	...	...	...	...	...	1	1	...	...	...	...	...	9
Erysipelas ... ..	23	...	...	...	1	21	1	4	10	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet fever ... ..	145	1	41	93	5	5	...	38	63	44	...	5	...	13	6	3	9	1	1	1	7	...	3	1	...	...	...	...	50
Typhus fever ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric Fever ... ..	10	...	...	...	5	5	...	3	1	6	...	...	...	...	...	...	1	...	1	...	...	...	2	...	...	...	...	...	4
Relapsing fever ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Continued fever ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal fever ... ..	1	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Plague ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chicken pox ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Anthrax ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals ... ..	223	2	49	117	17	37	1	59	90	74	1	5	4	15	6	3	10	1	2	1	7	1	6	1	...	...	...	63	

## RUNCORN SUB-DISTRICT

NOTIFIABLE DISEASE.	CASES NOTIFIED IN WHOLE DISTRICT.							TOTAL CASES NOTIFIED IN EACH LOCALITY.							
	At all Ages.	At Ages†—Years						ASTON.	ASTON GRANGE.	CLIFTON.	HALTON.	NORTON.	STOCKHAM.	SUTTON.	WESTON.
		Under 1	1 to 5	5 to 15	15 to 25	25 to 65	65 and upwards								
Small-pox ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cholera... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria including Membranous croup	14	1	1	9	2	1	...	1	...	5	1	...	...	...	7
Erysipelas ... ..	4	...	...	...	...	3	1	2	...	...	1	...	...	...	1
Scarlet fever ... ..	35	...	9	28	...	1	...	...	...	1	11	...	...	7	19
Typhus fever ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric fever ... ..	3	...	...	3	...	...	...	...	...	...	1	...	...	...	...
Relapsing fever ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Continued fever ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal fever ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Plague ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chicken-pox ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Anthrax ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals ... ..	59	1	10	49	2	5	1	3	..	6	14	...	...	7	29

## FRODSHAM SUB-DISTRICT.

NOTIFIABLE DISEASE.	CASES NOTIFIED IN WHOLE DISTRICT.							TOTAL CASES NOTIFIED IN EACH LOCALITY.								
	At Ages†—Years							ALVANLEY.	FRODSHAM.	FRODSHAM LORSHIP.	HELSEY.	KINGSLEY.	KINGSWOOD.	MANLEY.	NEWTON BY. FRODSHAM.	NORLEY.
	At all Ages.	Under 1	1 to 5	5 to 15	15 to 25	25 to 65	65 and upwards									
Small-pox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cholera...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria including Membranous croup	16	...	4	7	3	2	...	...	11	1	2	...	...	...	...	...
Erysipelas	10	...	...	...	...	10	...	...	6	1	2	...	...	...	...	1
Scarlet fever	63	1	18	40	2	2	...	...	46	13	...	1	...	...	2	1
Typhus fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric fever	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...
Relapsing fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Continued fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Plague	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chicken-pox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Anthrax	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals	90	1	22	47	6	14	...	...	63	15	5	1	...	...	2	4

## BUDWORTH SUB-DISTRICT.

NOTIFIABLE DISEASE.	CASES NOTIFIED IN WHOLE DISTRICT.							TOTAL CASES NOTIFIED IN EACH LOCALITY.																
	At all Ages.	At Age†—Years						ACTON GRANGE.	ANTROBUS.	APPLETON.	BUDWORTH.	W DUTTON.	GRAPPENHALL.	LATCHFORD WITHOUT.	H MOORE.	NEWTON BV. DARESBURY.	PRESTON-O' TH HILL.	STOCKTON HEATH.	STRETTON.	THELWALL.	WALTON INFERIOR.	WALTON SUPERIOR.	WHITLEY SUPERIOR.	BARTINGTON. CROWLEY. DARESBURY. HATTON. KECKWICK. SEVENOAKS. WHITLEY INFERIOR.
		Under 1	1 to 5	5 to 15	15 to 25	25 to 65	65 and upwards																	
Small-pox ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cholera... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria including Membranous croup	14	...	3	8	1	2	...	...	2	1	...	...	1	2	...	...	3	1	...	...	...	...	...	...
Erysipelas ... ..	9	...	...	...	1	8	...	...	...	...	...	1	...	...	1	...	4	...	1	1	...	...	...	4
Scarlet fever ... ..	44	...	14	22	6	2	...	...	...	11	...	3	1	2	...	...	18	2	...	4	...	1	2	1
Typhus fever ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
Enteric fever ... ..	6	...	...	...	1	5	...	...	...	1	...	2	1	1	...	...	...	...	1	...	...	...	...	...
Relapsing fever ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Continued fever ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal fever ... ..	1	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
Plague ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chicken-pox ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Anthrax ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals ... ..	74	...	17	30	9	18	...	2	1	12	...	7	3	5	1	...	25	3	2	5	...	1	7	

NOTES.—The localities adopted for this table should be the same as those in Tables II. and IV.

State in space below the name of the Isolation Hospital, if any, to which residents in the District, suffering from infectious disease, are usually sent. Mark (H) the locality in which it is situated, or if not within the district, state where it is situated, and in what district. The name of the authority by whom the Hospital is provided should also be given. Mark (W) the locality in which a Workhouse is situated.

\* This space may be used for record of other disease the notification (compulsory or voluntary) of which is in force in the District.

† These age columns for notifications should be filled up in all cases where the Medical Officer of Health, by inquiry or otherwise, has obtained the necessary information.

\*. Column 8 should be filled up with the Totals of cases removed to Hospital, whether the District is divided into separate localities or consists of only one undivided area.

{ Isolation Hospital—Name and Situation—Dutton.

Total available beds—12.

No. of Diseases that can be concurrently treated—Scarlet Fever, Typhoid Fever, Diphtheria.

{ Small-pox Hospital—Moore. 8 beds.

Both provided by Runcorn Rural District Council.



TABLE IV.—Causes of, and Ages at, Death during Year 1908

THE WHOLE DISTRICT.									RUNCORN Sub-district.									FRODSHAM Sub-district.									BUDWORTH Sub-district.													
CAUSES OF DEATH.	DEATHS AT THE SUBJOINED AGES OF "RESIDENTS" WHETHER OCCURRING IN OR BEYOND THE DISTRICT.								TOTAL DEATHS WHETHER OF "RESIDENTS" OR "NON-RESIDENTS" IN PUBLIC INSTITUTIONS IN THE DISTRICT.	DEATHS AT THE SUBJOINED AGES OF "RESIDENTS" WHETHER OCCURRING IN OR BEYOND THE DISTRICT.								TOTAL DEATHS WHETHER OF "RESIDENTS" OR "NON-RESIDENTS" IN PUBLIC INSTITUTIONS IN THE DISTRICT.	DEATHS AT THE SUBJOINED AGES OF "RESIDENTS" WHETHER OCCURRING IN OR BEYOND THE DISTRICT.								TOTAL DEATHS WHETHER OF "RESIDENTS" OR "NON-RESIDENTS" IN PUBLIC INSTITUTIONS IN THE DISTRICT.	DEATHS AT THE SUBJOINED AGES OF "RESIDENTS" WHETHER OCCURRING IN OR BEYOND THE DISTRICT.								TOTAL DEATHS WHETHER OF "RESIDENTS" OR "NON-RESIDENTS" IN PUBLIC INSTITUTIONS IN THE DISTRICT.				
	All ages.	Under 1 year	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.	All ages.		Under 1 year	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.	All ages.	Under 1 year		1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.	All ages.	Under 1 year	1 and under 5.		5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.	All ages.	Under 1 year	1 and under 5.	5 and under 15.		15 and under 25.	25 and under 65.	65 and upwards.	
1	2	3	4	5	6	7	8	9	2	3	4	5	6	7	8	9	2	3	4	5	6	7	8	9	2	3	4	5	6	7	8	9	2	3	4	5	6	7	8	9
Small-pox																																								
Measles	3	1	2														2	1	1						1		1													
Scarlet fever	8		6	2				3	1			1					1		1						6		5	1												
Whooping-cough	6	4	2						4	2	2						2								2															
Diphtheria (including membranous croup)	6	1	3	2					1	1							2		2						3		1	1		1										
Croup																																								
(Typhus)																																								
Fever																																								
(Euteric)																																								
(Other continued)																																								
Epidemic influenza	1					1																			1					1										
Cholera																																								
Plague																																								
Diarrhoea (See notes at back.)	4	3		1					1	1															3	2		1												
Euteritis. (See notes at back.)																																								
Puerperal fever (See notes at back)																																								
Erysipelas																																								
Other septic diseases																																								
Phthisis. Pulmonary tuberculosis	15		2		3	9	1	12	2		1			1			4		1		1	1	1	10	9				2	7			2							
Other tubercular diseases	20	4	6	4		6		2	6	2	3	1					4			1	3				10	2	3	2		3			2							
Cancer, malignant disease (See notes at back)	15				1	9	5	1	3					2	1		7								5					4	1									
Bronchitis	23	5	1	1		7	9	5	5	2		1		1	1		7	1	1						11	2				5	4			5						
Pneumonia	16	2	4		1	4	5	2	4		1				3		5	2	2						7		1		1	3	2		2							
Pleurisy	4		1			1	2	1									4		1																					
Other diseases of respiratory organs																																								
Alcoholism																																								
Cirrhosis of Liver	1					1											1				1																			
Veneral diseases																																								
Premature birth	15	15							4	4							6	6							5	5														
Diseases and accidents of parturition	1					1											1																							
Heart diseases	32			1	2	15	14	4	8			1	6	1			8			1		4	3		16				1	5	10		4							
Accidents	11	1			2	7	1	1	3				3				2				2				6	1			2	2	1		1							
Suicides	4					3	1		1					1											3					3										
All other causes	140	26	6	4	4	33	67	20	12	1	1	2		3	5		59	12	4		3	14	26		69	13	1	2	1	16	36		20							
All causes	325	62	33	15	13	97	105	51	55	13	8	5	1	16	12		115	24	13	2	5	32	39	10	155	25	12	7	7	50	54		41							

See Notes at Back.



## NOTES TO TABLES IV. AND V.

- (a) In Table IV, all deaths of "Residents" occurring in public institutions, whether within or without the district, are to be *included* with the other deaths in the columns for the several age groups (columns 2-8). They are also, in columns 9-15, to be *included* among the deaths in their respective "Localities" according to the previous addresses of the deceased as given by the Registrars. Deaths of "Non-residents" occurring in public institutions in the district are in like manner to be *excluded* from columns 2-8 and 9-15 of Table IV.
  - (b) See notes on Table I, as to the meaning of "Residents" and "Non-residents" and as to the "Public institutions" to be taken into account for the purposes of these Tables. The "Localities" in Table IV. should be the same as those in Tables II. and III.
  - (c) All deaths occurring in public institutions situated within the district, whether of "Residents" or of "Non-residents," are, in addition to being dealt with as in note (a), to be entered in the last column of Table IV. The total number in this column should equal the figures for the year in column 9, Table I.
  - (d) The total deaths in the several "Localities" in columns 9-15 of Table IV. should equal those for the year in the same localities in Table II., sub-columns c. The total deaths at all ages in column 2 of Table IV. should equal the gross total of columns 9-15, and the figures for the year in column 12 of Table I.
  - (e) Under the heading of "Diarrhoea" are to be included deaths registered as due to Epidemic diarrhoea, Epidemic enteritis, Infective enteritis, Zymotic enteritis, Summer diarrhoea, Dysentery and Dysenteric diarrhoea, Choleraic diarrhoea, Cholera and Cholera Nostris.
- Deaths from diarrhoea secondary to some other well-defined disease should be included under the latter.
- (f) Deaths from Enteritis, Munco-Enteritis, Gastro-Enteritis, and Gastritis (see under the heading Diarrhoeal Diseases in Table V.) in Tables IV. and V. should be placed immediately below, but separately from, those enumerated under the heading Diarrhoea as defined by enumeration above. This is particularly important for deaths under one year of age, as many of the deaths in infancy returned as due to Enteritis are really caused by Epidemic Diarrhoea. In the course of years, by the adoption of this recommendation, it will be practicable to ascertain the probable amount of transfer between these different headings.
  - (f) Under the headings of "Cancer" and "Puerperal fever" should be included all registered deaths from causes comprised within these general terms. Thus: Under "Cancer" should be included deaths from Cancer, 'Sarcoma, Malignant disease, Scirrhus, Epithelioma, Sarcoma, Villous tumour, and Papilloma, of bladder, Rodent ulcer. Under "Puerperal Fever" are to be included deaths from Pyæmia, Septicæmia, Sæpæmia, Pelvic peritonitis, Peri and Endo-Metritis, occurring in the Puerperium.
  - (g) Under "Congenital Defects" in Table V. are to be included deaths from Atelectasis, leterus neonatorum, Navel hæmorrhage, Malformations and Congenital hydrocephalus.
  - (h) Under "Tuberculous Meningitis" are to be included deaths from Acute hydrocephalus.
  - (i) Under "Other Tuberculous Diseases" are to be included deaths from Tuberculosis, Tuberculosis of bones, joints and other organs, Lupus and Scrofula.
  - (j) All deaths certified by registered Medical Practitioners and all Inquest cases are to be classed as "Certified"; all other deaths are to be regarded as "Uncertified."

In recording the facts under the various headings of Tables I, II, III, IV. and V., attention has been given to the notes on the Tables.

JOSEPH ADAMS, *Medical Officer of Health,*  
February, 1909.

# TABLE V.

Infantile Mortality during the year 1908.

Deaths from stated Causes in Weeks and Months under One Year of Age.

(See Notes at back of Table IV.)

## RUNCORN RURAL DISTRICT.

CAUSE OF DEATH.		Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-2 Months.	2-3 Months.	3-4 Months.	4-5 Months.	5-6 Months.	6-7 Months.	7-8 Months.	8-9 Months.	9-10 Months.	10-11 Months.	11-12 Months.	Total Deaths under One Year.
All Causes.	Certified ... ..	13	1	5	2	21	11	4	1	4	4	3	..	3	..	2	2	55
	Uncertified... ..	4				4				1	1	1						7
i. Common Infectious Diseases	Small-pox ... ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Chicken-pox ... ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Measles ... ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Scarlet Fever ... ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1
	Diphtheria (incuding Membranous Croup)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Whooping Cough ... ..	..	..	1	..	1	..	1	..	..	2	..	..	..	..	..	..	4
ii. Diarrhoeal Diseases	Diarrhoea, all forms	..	..	..	..	..	..	..	..	..	1	1	..	..	..	1	..	3
	Enteritis, Muco-enteritis, Gastro-enteritis	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	2
	Gastritis, Gastro-intestinal Catarrh	..	..	2	..	2	..	..	..	..	..	..	..	..	..	..	..	2
	(See Notes to Table IV.)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
iii. Wasting Diseases	Premature Birth ... ..	12	..	..	..	12	3	..	..	..	..	..	..	..	..	..	..	15
	Congenital Defects (See Notes to Table IV.)	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1
	Injury at Birth ... ..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1
	Want of Breast-milk, starvation, Atrophy, Debility, Marasmus	1	1	1	1	4	2	1	..	1	..	..	..	..	..	..	..	8
iv. Tuberculous Diseases	Tuberculous Meningitis (See Notes to Table IV.)	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	2
	Tuberculous Peritonitis, Tabes Mesenterica	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	2
	Other Tuberculous Diseases (See Notes to Table IV.)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1
	(See Notes to Table IV.)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
v. Other Causes	Erysipelas ... ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Syphilis ... ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Rickets ... ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Meningitis (not Tuberculous)	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1
	Convulsions ... ..	1	..	..	..	1	2	1	..	1	2	..	..	1	..	..	..	8
	Bronchitis ... ..	..	..	..	1	1	1	..	..	1	..	..	..	1	..	..	1	5
	Laryngitis ... ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Pneumonia ... ..	..	..	1	..	1	1	..	..	..	..	..	..	..	..	..	..	2
Other Causes	Suffocation, overlying	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1
	Other Causes	2	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	2
TOTAL		17	1	5	2	25	11	4	1	5	5	4	..	3	..	2	2	62

District, THE WHOLE DISTRICT.

Births in the year { legitimate 656  
illegitimate 9

Deaths in the year of { legitimate infants 62  
illegitimate infants nil

Population.

Estimated to middle of 1908,  
25,350.

Deaths from all Causes at all Ages, 325

by the Registrars.

Deaths of "Non-residents" occurring in public institutions

# APPENDIX, OR TABLE, VI.

## Table of Water Analyses, made during the Year 1908, by the County Analyst.

ALL RESULTS ARE EXPRESSED IN GRAINS PER GALLON.

1908. Description of Sample and Date when received	Appearance in Tube	Smell when heated to 100° F.	Total Solid Matter at 212° F.	Total Mineral Matter	Loss on ignition	Chlorine in Chlorides	Phosphoric Acid	Nitrogen in Nitrites	Nitrogen in Nitrates	Free Ammonia	Albumin- oid Ammonia	Oxygen Absorbed		Alkalinity	Soap destroyed by one gallon of the Water	Microscop- ical Examination of the Deposit	Poisonous Metals	General Remarks upon Sample
												3 min. at 60°	4 hours at 60°					
February 6th No. 1. No. 738 From Pump and Well to Birdwood Farm, Aston- Heath, Aston. (Mrs. E. Davies)	Clear	Nil	44.0	38.7	5.3	7.9	Nil	Nil	2.5	.0168	.0108	.025	.067	5.0	Over 100	Nil	Nil	This is a water of very doubtful purity. — The Nitrates are very high showing previous sewage contamination, I should recommend that the Well be cleaned out and another sample taken for analysis.
February 8th No. 2. No. 739 From Pump and Well in Yard to Dene House Great Budworth. (Mr. Ushers')	Clear	Nil	77.5	66.3	11.2	16.1	Nil	Nil	.164	.0007	.0066	.006	.008	26.7	500	Nil	Nil	This is a very hard water from Lime and Magnesia Salts, in other respects the water is good and may be used for domestic purposes if the user does not object to the excessive hardness.
February 8th. No. 3. No. 740 From Pump and Well in Stable Yard to Dene House, Great Budworth. (Mr. Ushers')	Clear	Nil	20.6	18.8	1.8	1.5	Nil	Nil	.14	.0021	.0091	.016	.019	6.7	100	Nil	Nil	This is a fairly good water and may be used for domestic purposes.
February 21st No. 4. No. 741 From Pump and Well to Farm Premises at Crowley. (Mr. H. Stringer's)	Clear	Nil	53.7	50.6	3.1	5.7	Trace	Nil	.131	.00875	.00805	.0234	.034	26.8	300	Organic	Nil	This is a very hard water from Lime and Magnesia Salts, in other respects the water is fairly good and may be used for domestic purposes, if the user does not object to the excessive hardness.
April 14th. No. 5. No. 742 From Birdwood Farm Aston Heath, Aston. (Mrs. E. Davies)	Cloudy	Nil	60.8	53.1	7.7	8.0	Trace	Nil	2.6	.025	.013	.022	.064	2.8	200	Nil	Nil	This is a very hard water from Lime and Magnesia Salts in other respects the water is not good and in my opinion it is not fit for domestic use.
May 16th. No. 6. No. 743 From Pump opposite to Aston Arms Inn, Sutton,	Clear	Nil	33.6	31.5	2.1	1.4	Nil	Nil	.15	Trace	.0042	.0028	.0084	12.5	200	Nil	Nil	This is a very hard water from Lime and Magnesia Salts. — In other respects it is a good water and fit for domestic use.
June 24th. No. 7. No. 744 From Gamekeeper's Cottage, near to The Hall in Norley.	Clear	Nil	6.7	5.4	1.3	.5	Nil	Nil	.26	Nil	.007	.017	.042	1.5	Under 100	Nil	Nil	This is a very good and soft water and fit for domestic use.
August 12th. No. 8. No. 745 From the Liverpool Sanatorium in Kings- wood.	Clear	Nil	18.8	17.8	1.0	1.5	Nil	Nil	.25	.002	.001	.002	.003	8.5	100	Nil	Nil	I consider this to be a First Class water and fit for domestic use.
August 27th. No. 9. No. 746 From Mersey View Tea Rooms at Overton, in Frodsham Lordship.	Clear	Nil	3.2	2.6	.6	.3	Nil	Nil	.046	.0056	.0014	.010	.0364	1.0	100	Nil	Nil	This is a First Class sample of Water, very soft and fit for domestic use
September 29th. No. 10. No. 747 From Pump and Well to Stud Farm, in Norley.	Clear	Nil	48.8	47.9	.9	6.5	Trace	Nil	.988	Nil	.0091	.067	.165	4.0	Over 100	Nil	Nil	This is a water of very doubtful purity, — I cannot recommend this water for domestic use.
September 29th. No. 11. No. 748 From Pump and Well to premises next to the Temperance Hall in Norley. (Mr. J. Chrimes')	Clear	Nil	27.2	23.7	3.5	4.5	Nil	Nil	.30	Trace	.0056	.0084	.036	2.5	100	Slight Iron Oxide.	Nil	This is a very good water, but hard, and fit for domestic use.
September 29th No. 12. No. 749 From running pipe on premises occupied by Mrs Vinah Chrimes, in Norley	Clear	Nil	17.2	15.1	2.1	3.0	Nil	Nil	.16	Nil	.0112	.019	.058	1.5	About 100	Nil	Nil	This is a fairly good water, and may be used for domestic purposes.
October 23rd. No. 13. No. 750 From Shallow Well in Land to Birdwood Farm, Aston-Heath, Aston. (Mr. J. Davies)	Clear	Nil	27.3	25.1	2.2	4.0	Nil	Nil	.55	Nil	.0084	Nil	.0168	3.5	Over 100	Nil	Nil	I consider this to be a good water and fit for domestic use.
November 7th. No. 14. No. 751. From Fields Farm in Seven Oaks.	Clear	Nil	96.3	88.2	8.1	13.5	Trace	Trace	.65	.0126	.0084	.022	.030	17.0	100	Organic	Nil	This is an exceedingly hard water from Lime and Magnesia Salts—taking this excessive hardness into account I do not think this water fit for domestic use.

Nos. 1 and 738, and Nos. 5 and 742 in this Report is the same water as Nos. 18 and 718 in Report for 1906,—Nos. 8 and 745 in this Report is the same water as Nos. 45 and 853 in Report for 1901—  
Nos. 10 and 747 is the same water as Nos. 29 and 675 in Report for 1904.



